**Pre-trip Inspection Purpose:** The pre-trip inspection determines whether the vehicle is safe to drive. Minnesota law requires drivers to complete a daily inspection.

For the test, you will perform a complete or partial pre-trip inspection.

Test Procedure: Drivers will be asked to perform a pre-trip inspection of the vehicle and to explain to the examiner what is being inspected and why. The examiner will mark on a scoring form each item that you correctly inspect and explain. Checklists are available at driver exam stations and in section 10 of this manual. You may use the checklist during the pre-trip inspection portion of the test. The vehicle must be safe and all major systems must work properly. This includes the lights, air brakes or other braking system and emergency brakes. Any major system that does not work properly must be repaired before the road test will begiven.

During the pre-trip inspection, you must point out each item to the examiner and explain what problems you would look for on a cold vehicle. You must mention the main points listed (see section 10 of this manual) in order to get credit for checking that item. You are not required to get under the vehicle or check fluids

**Vehicle Inspection Questions:**

1. What is the most important reason for doing a vehicle inspection?

 Safety is the most important reason you inspect your vehicle, safety for yourself and for other road users. Inspecting can save on problems later, like a breakdown on the road, which can be costly in dollars and time.

2. What things should you check during a trip?

* Watch gauges for signs of trouble
* Use your senses to check for problems (looks, listen, smell and feel)
* Check critical items when you stop:
	+ Tires, wheels, rims
	+ Brakes
	+ Lights and reflectors
	+ Brake and electrical connections to trailer
	+ Trailer coupling devices
	+ Cargo securement devices

3. Name some key steering system parts.

* Steering wheel
* Tie rod
* Steering shaft
* Power steering cylinder
* Steering arm
* Hydraulic fluid reservoir

4. Name some suspension system defects.

* Missing nuts, bolts, cotter keys, or other parts
* Bent loose, or broken parts, such as steering column, steering gear box, or tie rods
* If power steering equipped, check hoses, pumps, and fluid level, check for leaks
* Steering wheel play of more than 10 degrees can make it hard to steer

5. What three kinds of emergency equipment must you have?

* Spare electrical fuses
* Three red reflective triangles, 6 fuses or 3 liquid burning flare
* Properly charged and rated fire extinguisher

6. What is the minimum tread depth for front tires? For other tires?

* Front tire is 4/32 and rear tires is 2/32
* 75 lbs of pressure in the front and 80 lbs in the back

7. Name some things you should check on the front of your vehicle during the walk around inspection.

* Check that low beams are on and both of the four-way flashers are working
* Push dimmer swift and check that high beams work
* Condition of front axle
* Condition of steering system:
	+ No loose, worn, bent, damaged or missing parts
	+ Must grab steering mechanism to test for looseness
* Condition of windshield:
	+ Check for damage and clean, if dirty
	+ Check windshield wiper arms for proper spring tension.
	+ Check wiper blades for damage, “stiff” rubber, and securement
* Lights and reflectors:
	+ Parking, clearance and identification lights clean, operating and proper color (amber at front)
	+ Reflectors clean and proper color (amber at front)
	+ Right front urn signal light clean, operating and proper color (amber or white on signals facing forward)

8. What should wheel bearing seals be checked for?

* leaks

9. How many red reflective triangles should you carry?

* 3

10. How do you test hydraulic brakes for leaks? ‘

* Pump the brake pedal three times, then apply firm pressure to the pedal and hold for five seconds. The pedal should not move. If it does, there may be a leak or other problem.

11. Why put the starter switch key in your pocket during the pre-trip inspection?

* So that no one starts and moves your vehicle without you knowing

**Control of Your Vehicle:**

1. Why should you back toward the driver's side?

* You can see better
* You can watch the rear of your vehicle by looking out the side window

2. If stopped on a hill, how can you start moving without rolling back?

* When you have applied enough engine power to keep from rolling back, then you can release the parking brake.

3. When backing, why is it important to use a helper?

* There are blind spots you can’t see
* Should stand near the back of your vehicle where you can see the helper
* Work out a set of hand signals you both understand beforehand, like the sign for stop

4. What's the most important hand signal that you and the helper should agree on?

* Stop

5. What are the two special conditions where you should downshift?

* Before starting down a hill
* Before entering a curve

6. When should you downshift automatic transmissions?

* When going down grades, the lower ranges prevent the transmission from shifting up beyond the selected gear

7. Retarders keep you from skidding when the road is slippery. True or False?

* False

8. What are the two ways to know when to shift?

* Watch your tachometer and shift up when your engine reaches the top of the range

Learn what speeds each gear is good form, then by using the speedometer, you’ll know when to shift up

**Seeing:**

1. How far ahead does the manual say you should look?

* 12 to 15 seconds ahead, low speeds would be one block, high speeds would be a quarter of a mile

2. What are two main things to look for ahead?

* Vehicles coming onto the highway, in your lane
* Or turning

3. What's your most important way to see the sides and rear of your vehicle?

* Checking mirrors
	+ Regularly
	+ For traffic
	+ Lane changes
	+ Turns
	+ Merges
	+ Tight maneuvers

4. What does "communicating" mean in safe driving?

* Signaling your intentions…other drivers can’t know what you are going to do until you tell them
* And you do that by signaling for turns, lane changes, slowing down (four-ways)

5. Where should your reflectors be placed when stopped on a divided highway?

* Place warning devices 10 feet, 100 feet, and 200 feet toward the approaching traffic

6. What three things add up to total stopping distance?

* Perception distance + reaction distance + braking distance = Total Stopping Distance

7. If you go twice as fast, will your stopping distance increase by two or four times?

* Four times greater
* Breaking distance is also four times longer

8. Empty trucks have the best braking. True or False?

* False. Brakes, tires, spri8ngs and shock absorbers on heavy vehicles are designed to work best when the vehicle if fully loaded. Empty trucks require greater stopping distances because an empty vehicle has less traction.

9. What is hydroplaning?

* It’s like water skiing – the tires lose their contact with the road and have little or no traction. You may not be able to steer or brake. Release the accelerator, do not use the brakes to slow down.

10. What is "black ice”?

* It’s a thin layer that is clear enough that you can see the road underneath it. It makes the road look wet.

**Managing Space:**

1. How do you find out how many seconds of following distance space you have?

* One second for each 10 feet of vehicle length at speeds below 40 mph. For greater speeds, you must add 1 second for safety.

2. If you are driving a 30-foot vehicle at 55mph, how many seconds of following distance should you allow?

* 4 seconds

3. You should decrease your following distance if somebody is following you too closely. True or False?

* False – increase your following distance. Opening up room in front of you will help you to avoid having to make sudden speed or direction changes. It also makes it easier for the tailgater to get around you.

4. If you swing wide to the left before turning right, another driver may try to pass you on the right. True or False?

* True

5. What is a hazard?

* A hazard is any road condition or other road user (driver, bicyclist, pedestrian) that is a possible danger. Examples include: Blocked vision, delivery trucks, pedestrians and bicyclists, distractions, children, talkers, workers, ice cream trucks, disable vehicles, shoppers, crashes, confused drivers, slow drivers, drivers signaling, and impaired drivers.

6. Why make emergency plans when you see a hazard?

* To have time to plan a way out of any emergency. Then about the emergencies that could develop and figure out what you would do. Always be prepared to take action based on your plans.

**Distracted Driving**

1. What are some tips to follow so you won’t become a distracted driver?

* Turn off all communication devices
* Use an earpiece when talking on phone, voice-activated dialing
* Do not type or read a text message on a mobile device while driving
* Adjust all vehicle controls and mirrors to your preference before you drive

2. How do you use in-vehicle communications equipment cautiously?

3. How do you recognize a distracted driver?

* Vehicles that may drift over the lane divider lines or within their own lane
* Vehicles traveling at inconsistent speeds
* Drivers who are preoccupied with maps, food, cigarettes, cell phones, or other objects
* Drivers who appear to be involved in conversations with their passengers

4. What is the difference between aggressive driving and road rage?

* Aggressive driving is the act of operating a motor vehicle in a selfish, bold or pushy manner, without regard for the rights or safety of others (changing lanes frequently and abruptly without notice to others)
* Road rage is operating a motor vehicle with the intent of doing harm to others or physically assaulting a driver or their vehicle.

5. What should you do when confronted with an aggressive driver?

* First and foremost, make every attempt to get out of their way
* Put your pride in the back seat. Do not challenge them by speeding or attempting to hold-your-own in your travel lane
* Avoid eye contact
* Ignore gestures and refuse to react to them
* Report aggressive drivers to the appropriate authorities by providing a vehicle description, license number, location and, if possible, direction of travel

6. What are some things you can do to reduce your stress before and while you drive?

* Listen to easy-listening music
* Give driving your full attention
* Expect delays and be ok with it
* Slow down and keep your distance
* Avoid gestures
* Be a cautious and courteous driver

**Driving at night, fog, winter, and very hot weather**

1. You should use low beams whenever you can. True or False?

* False. Use high beams when it is safe and legal to do so.

2. What should you do before you drive if you are drowsy?

* Sleep before you drive! Get adequate sleep, 8 to 9 hours
* Prepare route, plan stops
* Schedule trips for when you’re normally awake
* Driver with passenger
* Avoid drowsy medications
* Exercise

3. What effects can wet brakes cause? How can you avoid these problems?

* Wet brakes can cause the brakes to be weak, to apply unevenly, or to grab. It causes a lack of braking power, wheel lockups, pulling to one side or the other
* You should slow down
* Gently put on the brakes
* Increase engine rpm and cross the water while keeping light pressure on the brakes
* When out of the water, maintain light pressure on the brakes for a short distance to heat them up and dry them out

4. You should let air out of hot tires so the pressure goes back to normal. True or False?

* False. If you do, it will be too low when the tires cool off

5. You can safely remove the radiator cap as long as the engine isn't overheated. True or False?

* True. If you can touch the radiator cap with your bare hand, it is probably cool enough to open

**Railroad-highway crossings**

1. What factors determine your selection of a "safe" speed when going down a long, steep downgrade?

* Select a speed that is not too fast for the total weight of the vehicle and cargo, length of the grade, steepness of the grade, road conditions and weather.

2. Why should you be in the proper gear before starting down a hill?

* Because you won’t be able to shift into a lower or any gear after you start and all engine braking effect will be lost

3. Describe the proper braking technique when going down a long, steep downgrade.

* Apply the brakes just hard enough to feel a definite slowdown
* When your speed has been reduced to approximately five mph below your safe speed, release the brakes
* When your speed has increased to your “safe” speed, repeat steps 1 and 2

4. What type of vehicles can get stuck on a railroad-highway crossing?

* Low slung units (lowboy, car carrier, moving van, possum-belly livestock trailer)
* Single-axle tractor pulling a long trailer with its landing gear set to accommodate a tandem-axle tractor

5. How long does it take for a typical tractor-trailer unit to clear a double track?

* At least 14 seconds to clear a single track and more than 15 seconds to clear a double track

**Driving Emergencies**

1. Stopping is not always the safest thing to do in an emergency. True or False?

* True. When you don’t have enough room to stop, you may have to steer away from what’s ahead. You can always turn to miss an obstacle more quickly than you can stop.

2. What are some advantages of going right instead of left around an obstacle?

* No one is likely to be driving on the shoulder, to your right, but someone may be passing you on the left. Moving right won’t force anyone into an opposing traffic lane and a possible head-on collision

3. What is an "escape ramp?"

Found a few miles from the top of the downgrade, that use soft gravel that resists the motion of the vehicle and bring it to a stop or turn uphill, using the hill to stop the vehicle and soft gravel to hold it in place

4. If a tire blows out, you should put the brakes on hard to stop quickly. True or False?

False. Unless you’re about to run into something, stay off the brake until the vehicle has slowed down, then brake very gently, pull off the road and stop

5. How do you know if your vehicle has antilock brakes?

* Tractors, trucks and buses will have yellow ABS malfunction lamps on the instrument panel.

6. What is the proper braking technique when driving a vehicle with antilock brakes?

* Use only the braking force necessary to stop safely and stay in control
* Brake the same way, regardless of whether you have ABS on the bus, tractor, the trailer or both
* As you slow down, monitor your tractor and trailer and back off the brakes (if it is safe to do so) to stay in control

7. How do antilock brakes help you?

* Helps you avoid wheel lock up and maintain control. You may or may not be able to stop faster with ABS, but you should be able to steer around an obstacle while braking and avoid skids caused by over-braking

**Accident procedures**

1. What are some things to do at an accident scene to prevent another accident?

* Protect the area
* Notify authorities
* Care for the injured

2. Name two causes of tire fires.

* Under-inflated tires and duals that touch

3. What kinds of fires is a B:C extinguisher not good for?

* Burning wood, paper and cloth

4. When using your extinguisher, should you get as close as possible to the fire?

* No, stay as far away from the fire as possible

5. Name some causes of vehicle fires.

* after accidents there might be spilled fuel, mixed with improper use of flares
* electrical system, short circuits due to damaged insulation
* fuel, driver smoking, improper fueling, loose fuel connections
* flammable cargo, poor ventilation, improperly sealed or loaded cargo

**Alcohol, other drugs, and driving**

1. Common medicines for colds can make you sleepy. True or False?

* True

2. What should you do if you become sleepy while driving?

* Keep cool by keeping the window cracked or the air conditioner on
* Take breaks by stopping often and move around

3. Coffee and a little fresh air will help a drinker sober up. True or False?

* False

4. What is a hazardous materials placard?

* Placards are used to warn others of hazardous materials and are put on the outside of a vehicle that identify the hazard class of the cargo in the front, rear, and both sides of vehicle.

5. Why are placards used?

* To warn others of hazardous materials on board

6. What is “sleep debt”?

* If you don’t sleep enough, you “owe” more sleep to yourself. This debt can only be paid off by sleeping

7. What are the danger signals of drowsy driving?

* Your eyes close or go out of focus by themselves
* You have trouble keeping your head up
* You can’t stop yawning
* You have wandering, disconnected thoughts
* You don’t remember driving the last few miles
* You drift between lanes, tailgate or miss traffic signs
* You keep jerking the truck back into the lane
* You have drifted off the road and narrowly missed crashing

**Transporting cargo safely**

1. What four things related to cargo are drivers responsible for?

* Inspecting your cargo
* Recognizing overloads and poorly balanced weight
* Knowing your cargo is properly secured and does not obscure your view ahead or to the sides
* Knowing your cargo does not restrict your access to emergency equipment

2. How often must you stop while on the road to check your cargo?

* Within the first 50 miles of the trip
* After you have driven for 3 hours or 150 miles
* After every break you take during driving

3. How is Gross Combination Weight Rating different from Gross Vehicle Weight?

* GCWR is the value specified by the manufacturer of the power unit
* GVWR is the value specified by the manufacturer as the loaded weight of a single vehicle

4. Name two situations where legal maximum weights may not be safe.

* Overloaded trucks have to go very slowly on upgraded
* And they may gain too much speed on downgrades, increasing stopping distance

5. What can happen if you don't have enough weight on the front axle?

* Can make the steering axle weight too light to steer because it causes poor traction

6. What is the minimum number of tie-downs for any flatbed load?

* One tie-down for each ten feet of cargo. Even the smallest load needs to have two tie-downs.

7. What is the minimum number of tie-downs for a 20-foot load?

* 2

8. Name the two basic reasons for covering cargo on an open bed.

* To protect people from spilled cargo
* To protect the cargo from weather

9. What must you check before transporting a sealed load?

* That you don’t exceed gross weight and axle weight limits

**Transporting Passengers Safely**

1. Name some things to check in the interior of a bus during a pre-trip inspection.

* That aisles and stairwells are clear
* In safe working condition
	+ Each handhold and railing
	+ Floor covering
	+ Signaling devices
	+ Emergency exit handles

2. What are some hazardous materials you can transport by bus?

* Small-arms ammunition labeled ORM-D
* Emergency hospital supplies and drugs

3. What are some hazardous materials you can’t transport by bus?

* Division 2.3 poison gas, liquid Class 6 poison, tear gas, irritating material
* More than 100 pounds of solid Class 6 poisons
* Explosives in the space occupied by people
* Labeled radioactive materials in the space occupied by people
* More than 500 pounds total of allowed hazardous materials, and no more than 100 batteries or gasoline

4. What is a standee line?

* No rider may stand forward of the rear of the driver’s seat. You will know where this is by a two-inch line on the floors, you can’t stand in front of that.

5. Does it matter where you make a disruptive passenger get off the bus?

* Yes, you don’t want to drop them off where it would be unsafe for them. Preferably at the next stop or a well-lit area where there are other people.

6. How far from a railroad crossing should you stop?

* Stop your bus between 15 and 50 feet before railroad crossings
* Listen and look in both directions for trains. You should open your forward door if it improves your ability to see or hear an approaching train
* Before crossing after a train has passed, make sure there isn’t another train coming in the other direction on the other tracks
* You do not have to stop, but you must slow down and carefully check the other vehicles:
	+ At streetcar crossings
	+ Where a policeman or flagman is directing traffic
	+ If a traffic signal is green
	+ At crossings marked as “exempt” or “abandoned”

7. When must you stop before crossing a drawbridge?

* Stop at least 50 feet before the draw of the bridge and make sure the draw is completely closed before crossing

8. Describe from memory the “prohibited practices” listed in the manual.

* Avoid fueling bus with riders on board unless absolutely necessary
* Don’t talk with riders, or engage in any other distracting activity while driving
* Do not tow or push a disabled bus with riders aboard the vehicle, unless getting off would be unsafe

9. The rear door of a transit bus has to be open to put on the parking brake. True or False?

* False

**Hazardous Materials**

1. Shippers package in order to safely load, transport and unload the material. These are called containment rules.

2. Driver placard their vehicle to communicate the risk.

3. What three things do you need to know to decide which placards (if any) you need?

* Materials hazard class
* Amount being shipped
* Amount of all hazardous materials of all classes on your vehicle

4. A hazardous materials identification number must appear on both sides and on both ends of the vehicle. The identification number must also appear on cargo tanks and other bulk packaging.

5. Where must you keep shipping papers describing hazardous materials?

* Must be visible and accessible to emergency personnel at all times, which includes when you are out of the vehicle.

**Loading and unloading**

1. Around which hazard classes must you never smoke?

* Class 1 (Explosives)
* Class 2.1 (flammable gas)
* Class 3 (flammable liquids)
* Class 4 (flammable solids)
* Class 5 (Oxidizers)

2. Which three hazard classes should not be loaded into a trailer that has a heater/air conditioner unit?

* Class 1 (Explosives), 3 (flammable liquids), and 2.1 (flammable gas)

3. Should the floor liner required for Division 1.1 or 1.2 materials be stainless steel?

* No. use a floor lining with Division 1.1, 1.2 or 1.3 Class A or B explosives. The floors must be tight and the liner must be either non-metallic or non-ferrous metal.

4. At the shipper’s dock you’re given a paper for 100 cartons of battery acid. You already have 100 pounds of dry Silver Cyanide on board. What precautions do you have to take?

* They cannot be loaded together

5. Name a hazard class that uses transport indexes to determine the amount that can be loaded in a single vehicle.

* Class 7 radioactive materials

**Bulk packaging marking, loading and unloading**

1. What are cargo tanks?

* Are bulk packaging permanently attached to the vehicle

2. How is a portable tank different from a cargo tank?

* Are bulk packaging, which are NOT permanently attached to the vehicle

3. Your engine runs a pump used during delivery of compressed gas. Should you turn off the engine before or after unhooking hoses after delivery?

* Before

**Hazardous Materials – driving and parking rules & emergencies**

1. If your placarded trailer has dual tires, how often should you check the tires?

* Check B placarded vehicles with dual ties at the start of each trip and when you park. You must stop and check the tires every 2 hours or 100 miles, whichever is less.

2. What is a safe haven?

* An approved place for parking unattended vehicles loaded with explosives. Designation of authorized safe haven is usually made by local authorities.

3. How close to the traveled part of the roadway can you park with Division 1.2 or 1.3 materials?

* Never within 5 feet of the road

4. How close can you park to a bridge, tunnel, or building with the same load?

* Within 300 feet

5. What type of fire extinguisher must placarded vehicles carry?

* With a UL rating of 10 B:C or more

6. You’re hauling 100 pounds of Division 4.3 (dangerous when wet) materials. Do you need to stop before a railroad-highway crossing?

* Yes

7. At a rest area you discover your hazardous materials shipments slowly leaking from the vehicle. There is no phone around. What should you do?

* Never continue driving with hazardous material leaking form your vehicle in order to find a phone booth, truck stop, help or similar reason. You should park it, secure the area, stay there and send someone else for help.

8. What is the Emergency Response Guide (ERG)?

* A Department of Transportation guidebook for firefighters, police and industry workers on how to protect themselves and the public from hazardous materials.